

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 22-7792
Exam Date: 07/24/2019

1. Current Owner:
CATHERINE H ROWAN PO BOX 566 DRAPER UT 84020
2. Accompanied by:
Phone No:
Address:
Relationship to permit Holder:

3. **SOURCE:**
GROUND WATER

Method of Determination: Aerial photography.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: No overlapping water rights

Comments: _____

2. Other water rights with the same point-of-diversion:

Water Right No.	Source	Purpose of Use	Basis
22-7280A	Ground Water	Irrigation	Decreed
22-7280B	Ground Water	Irrigation	Decreed

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER SW¼ SW¼, Sec. 11, Twp 05N, Rge 40E, B.M. MADISON County

Method of Determination: GPS and site visit

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	40E	14									21.5	21.5	37.0	39.8			8.2		128.0
05N	40E	15																3.0	3.0
05N	40E	23		2.0			11.0	6.5											19.5

Total Acres: 150.5

Method of Determination: Aerial photography

3.

X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X Aerial Photo Attached (required for irrigation of 10+ acres).

X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
WMIS # 1002972 Gaza Well	GE	600			12"
Booster pump	GE	200			

D. FLOW MEASUREMENTS

1. Measurements:

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method: Measurement based on 1998 re-examination field report for water right 22-7280 (split into 22-7280A & 22-7280B) Total rate of diversion calculated for interconnected system was 14.0 cfs.

Recommended Q = 3.0 cfs

Rights 22-7280A and 22-7792 (Rowan water rights) will be limited to 5.36 cfs.

Wilcox Brother water rights:

Rowan Water Rights

22-2223 = 3.87 cfs	22-7792 = 3.0 cfs
22-7280B = 4.77 cfs	22-7280A = 4.77 cfs
Combined = 8.64 cfs	Combine limit = 5.36 cfs

8.64 cfs + 5.36 cfs = 14.0 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 150.5 \text{ acres} \times 3.5 \text{ acre-feet} = 526.8 \text{ acre-feet}$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 3 \text{ cfs} \times 184 \text{ days} \times 1.9835 = 1094.9 \text{ acre-feet}$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 526.8 \text{ acf-feet}$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

This right was developed at the same time water right 22-7280 (734.0 acres) was developed (1978). However the current water right owner at that time did not include the 150.5 acres when they applied for 22-7280. The additional 150.5 acres was discovered during the beneficial use field exam under 22-7280 (split into 22-7280A and 22-7280B).

Water delivery system consists of two interconnected points of diversion known as the Gaza well (section 11 well) and Horkley well (section 3 well). These two wells supply water to several pivots described under water rights 22-2223, 22-7280A, 22-7280B and 22-7792. According to the 1998 re-examination field report for water right 22-7280 (split into 22-7280A & 22-7280B) the total rate of diversion calculated for the interconnected system was 14.0 cfs. The rate of diversion at the Horkley well (north well) was 4.47 cfs. The rate of diversion at the Gaza well (south well) was 9.53 cfs.

The interconnected irrigation system was owned and operated under common ownership. Since then the water right ownership and operation of the irrigation system has changed. Wilcox Brothers is the current owner of water rights 22-2223 and 22-7280B and owner of the property at the Horkley well (section 3). Catherine Rowan is the current owner of water rights 22-7280A and 22-7792 and owner of the property at the Gaza well (section 11). Rowan leases her land and the Gaza well to Wilcox Brothers. According to Wilcox Brothers the Gaza well is used to irrigate the 150.5 acres described under 22-7792. Because these water rights are under separate ownership and because Wilcox brothers only uses the Gaza well to irrigate the 150.5 acres water right 22-7792 will only list the Gaza well as an authorized point of diversion. To avoid an enlargement water rights 22-7792 and 22-7280A will be limited to 5.36 cfs.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	4/15 to 10/15	3.00 CFS	526.8 AF

Totals: 3.00 CFS 526.8 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

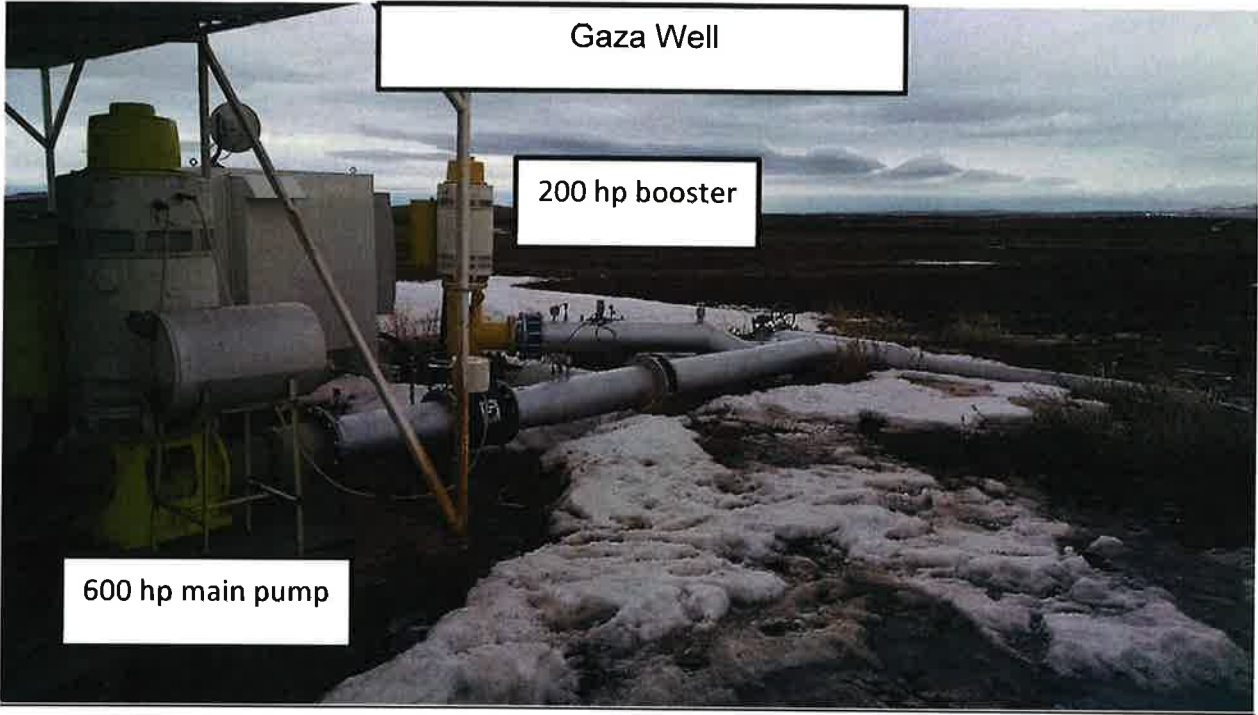
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

Field Examiner's Name: Blake Jordan

Date: 8/15/2019

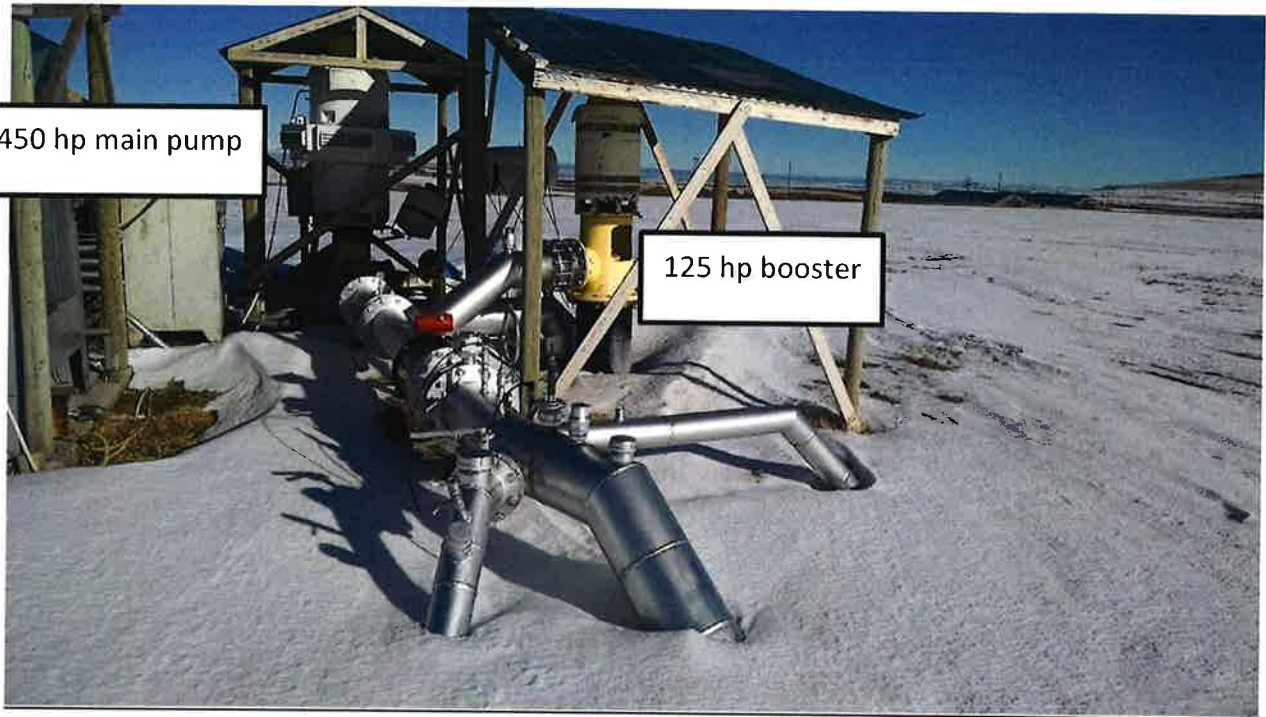
Reviewer _____ Date _____



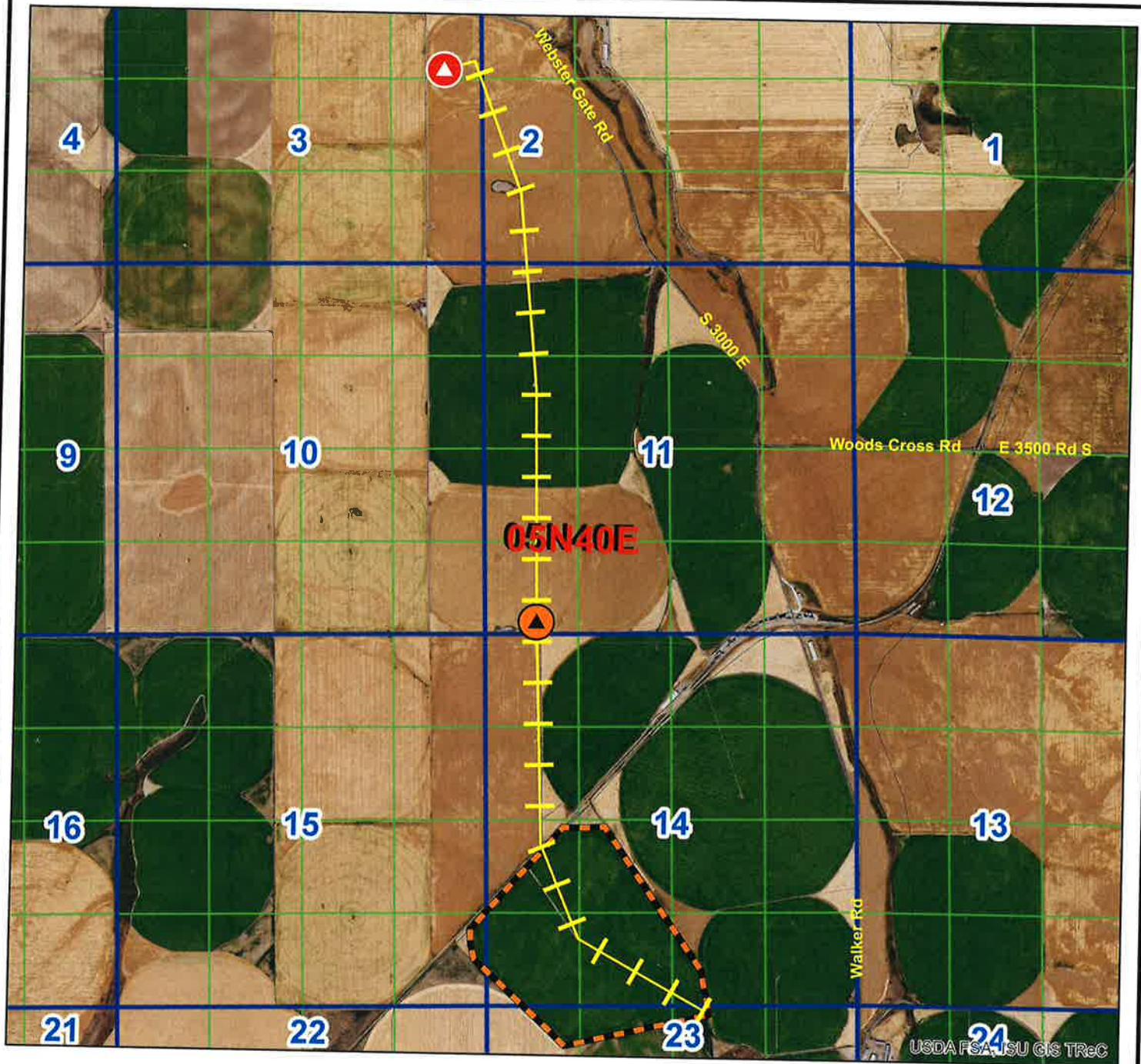
Horkley Well

450 hp main pump

125 hp booster



Water Right License 22-7792



 GAZA WELL

 HORKLEY WELL

 Mainline

 Place of use 22-7792

 Township/Range

 Sections

 QQ

0 1,150 2,300 4,600 Feet

1 inch = 2,110 feet

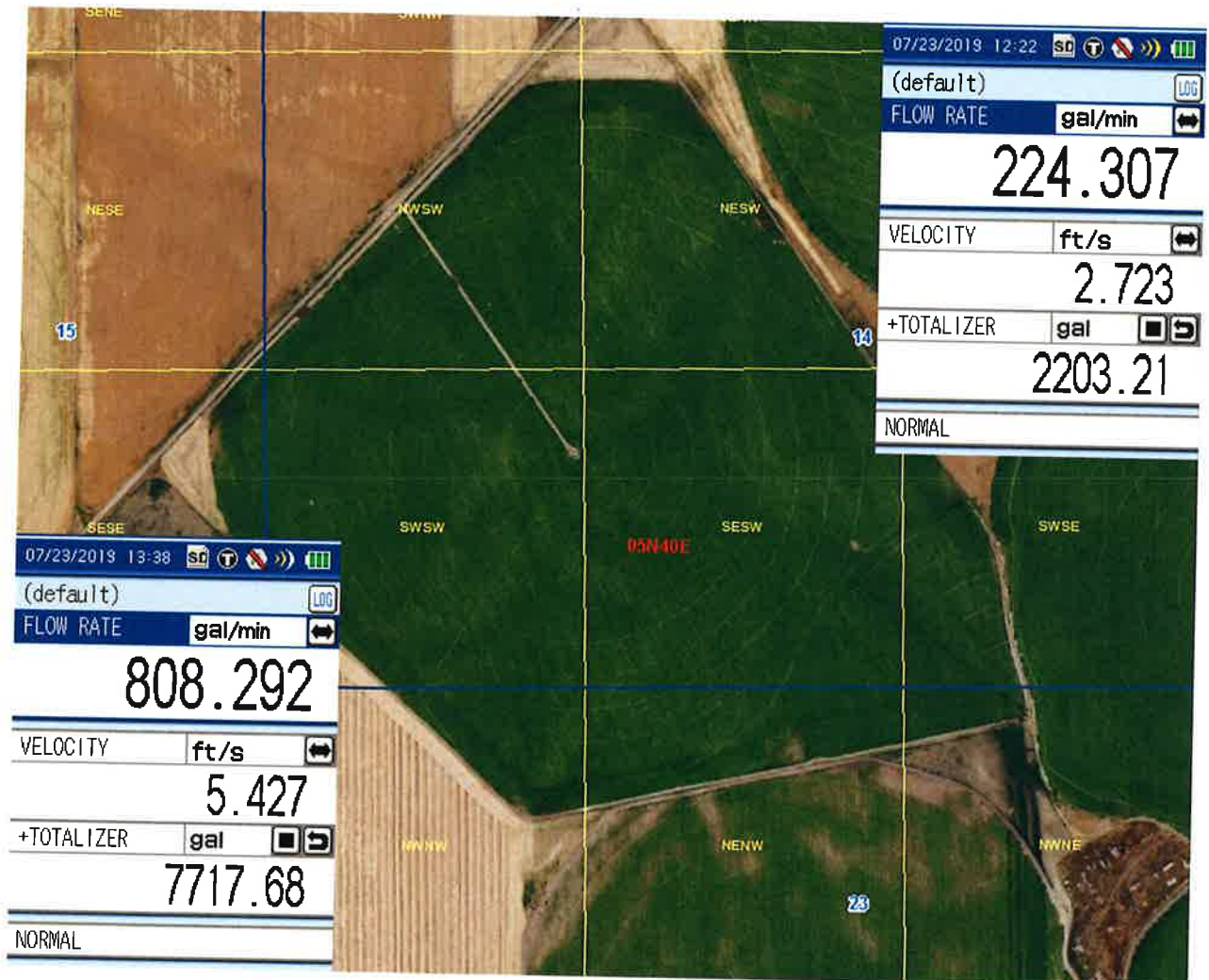


Exam of Water Permit 22-7792 was completed on 23 July 2019.

Small Wiper Pivot: 220.32 GPM

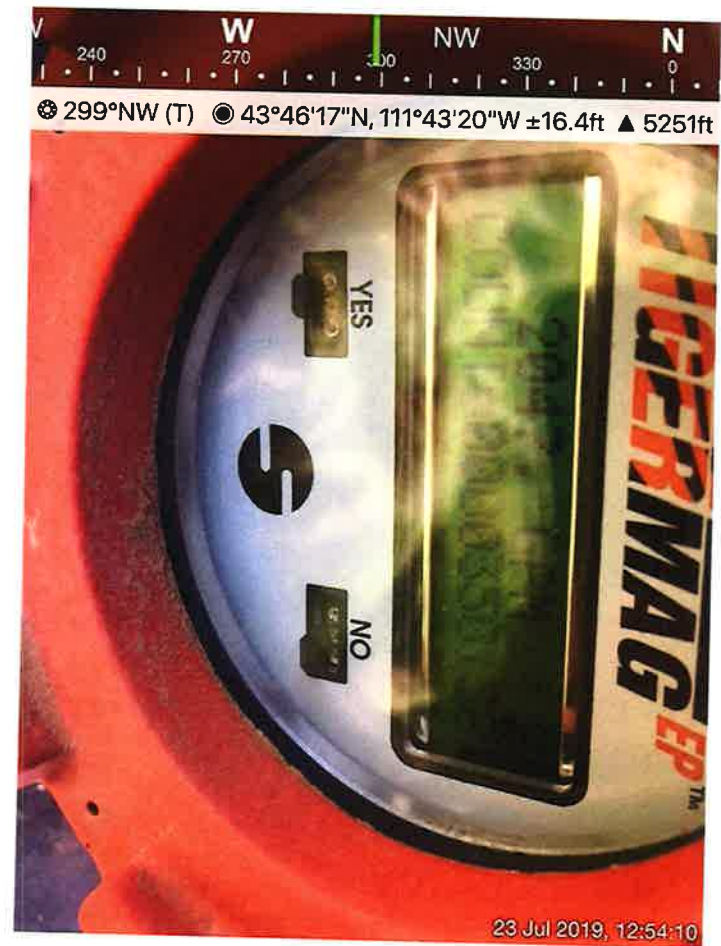
Large Pivot: 771.77 GPM

Total GPM = 992.09 GPM at time of examination





WMIS 1003029 Flow Meter



WMIS 1002972 Flow Meter

22-7280 A, 22-7280 B, 22-2223



- WMS
- Pivot Running
- Pivot Off

Jadamsen IDWR 7/23/2019

Sent: Wednesday, June 12, 2019 1:14 PM
To: Jordan, Blake <Blake.Jordan@idwr.idaho.gov>
Subject: RE: Well(s) used under Permit 22-7792

Hi Blake,

I am told we use the Gaza Well (WMIS# 1002972) for that field.

Thanks,

Emily Tolley
CCA Agronomist
Keith Wilcox and Sons
513.907.3360

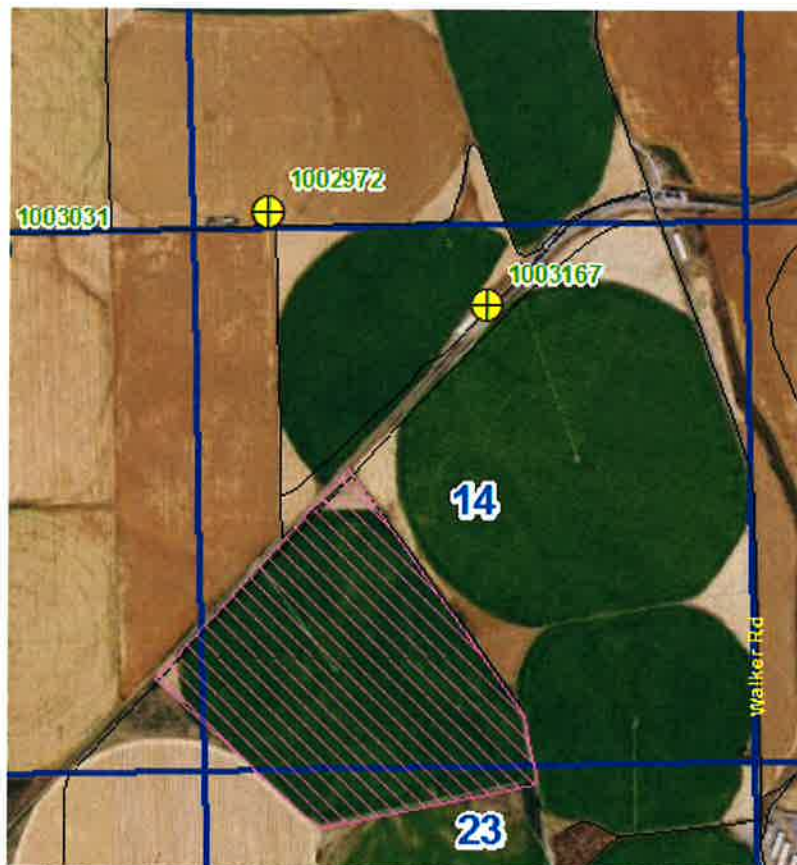
From: Jordan, Blake [<mailto:Blake.Jordan@idwr.idaho.gov>]
Sent: Wednesday, June 12, 2019 11:27 AM
To: emily@wilcoxfresh.com
Subject: Well(s) used under Permit 22-7792

Hi Emily,

I am working on a water right license for permit 22-7792 (CATHERINE H ROWAN). Can you tell me which wells are used to irrigate the pivot outlined in pink?

Thanks,

Blake Jordan
Water Rights Supervisor
Idaho Department Of Water Resources
900 N Skyline Dr. Suite A.
Idaho Falls. ID 83402



Jordan, Blake

From: Emily Tolley <emily@wilcoxfresh.com>
Sent: Thursday, July 11, 2019 9:07 AM
To: Jordan, Blake
Subject: RE: Well(s) used under Permit 22-7792
Attachments: scan.pdf

Hi Blake,

Attached is a map made in 2016 (before my time) that shows how the wells and pivots are connected for the Gaza fields. The Gaza well (WMIS# 1002972) does provide water for several fields in that area.

Since I have you on the line, after July 19th, I will no longer be an employee with Keith Wilcox and Sons. I've accepted an agronomist position with a different company. Your best line of contact for questions would be Heidi McCoy (email: heidi@wilcoxfresh.com office number: 1.208.227.5114). I know working with growers who have a chip on their shoulder with the water district isn't fun. I hope I've broken that barrier. Thank you for all that you do to protect one of our most precious resources!

Emily Tolley
CCA Agronomist
Keith Wilcox and Sons
513.907.3360

From: Jordan, Blake [mailto:Blake.Jordan@idwr.idaho.gov]
Sent: Thursday, July 11, 2019 8:39 AM
To: emily@wilcoxfresh.com
Subject: RE: Well(s) used under Permit 22-7792

Hi Emily,

Is the Gaza well interconnected with any other well? And does the Gaza well have a mainline that solely distributes water to the field described under permit 22-7792 (outlined in pink below)?

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Sent: Wednesday, June 12, 2019 1:14 PM
To: Jordan, Blake <Blake.Jordan@idwr.idaho.gov>
Subject: RE: Well(s) used under Permit 22-7792

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Emily Tolley
CCA Agronomist
Keith Wilcox and Sons
513.907.3360

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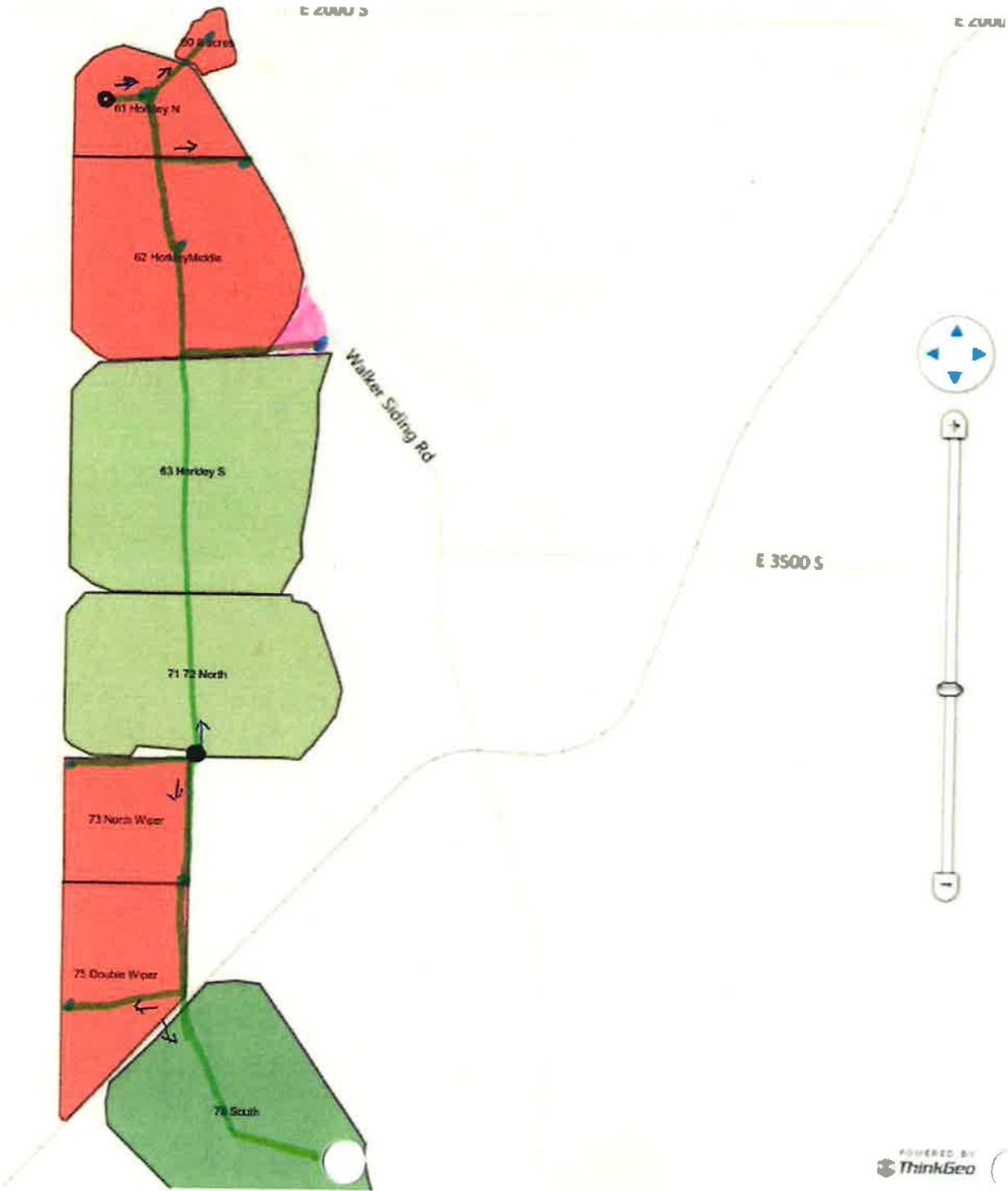
Thanks,

Blake Jordan
Water Rights Supervisor
Idaho Department Of Water Resources
900 N Skyline Dr. Suite A.
Idaho Falls, ID 83402
(208)525-7161



Madison
E 10th St

HORKLEY-GAZA WATER SYSTEM



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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

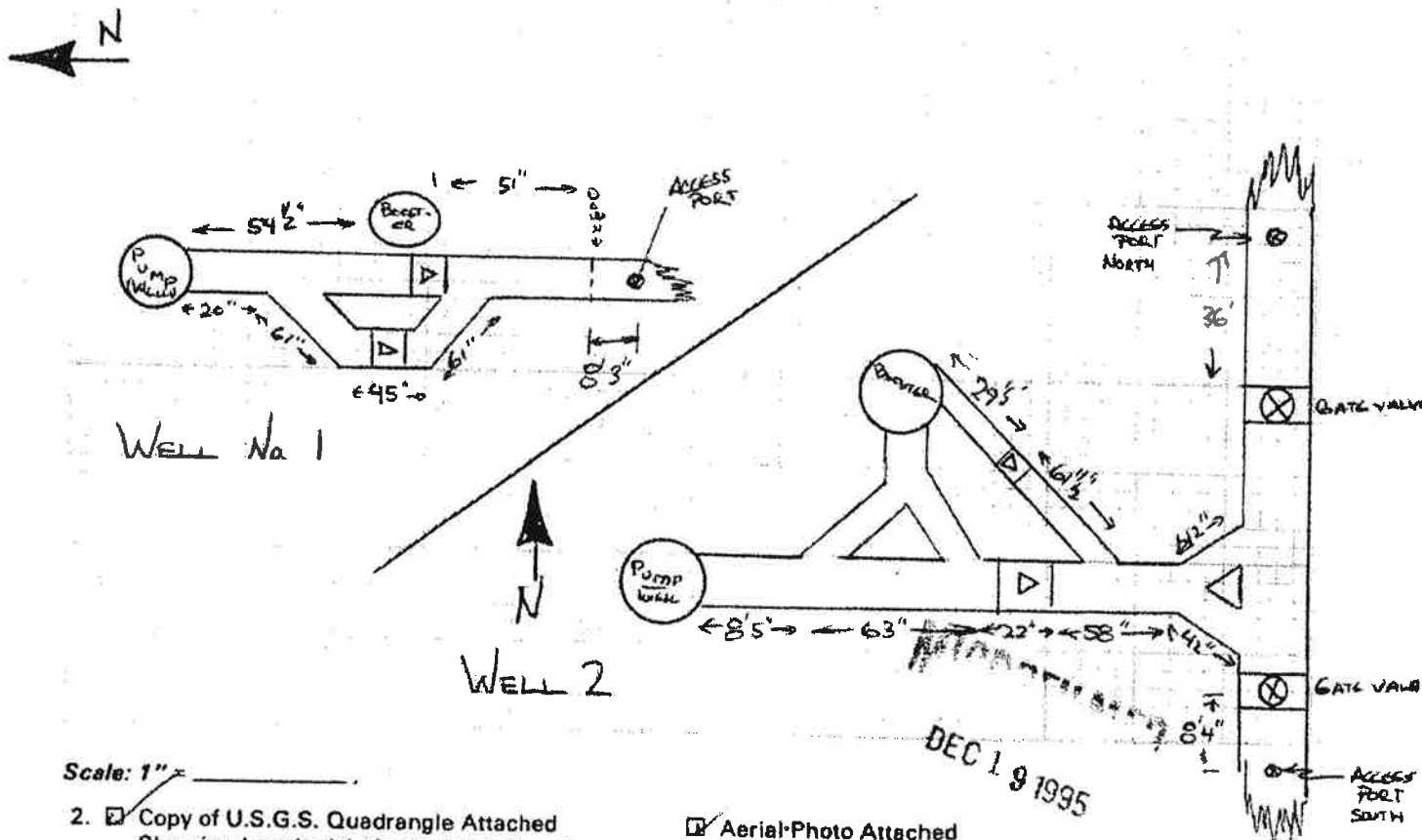
1. Owner: LUCILLE W. OR SUE W. HOWE Permit No. 22-7280
Current Address: Box 803, REXBURG, ID. 83440 Phone No. 356-3027
2. Accompanied by: NORMAN RILEY EXAM. DATE: 29-JUNE-1987
Address: 1623 W. 3400 S., REXBURG, ID 83440 Phone No. 356-5873
Relationship to Permit Holder: SON-IN-LAW / OPERATOR
3. Source: GROUNDWATER tributary to _____

B. OVERLAP REVIEW

1. Other water rights with same place of use: 22-2223 (PORTION) ☐ Copies Attached
2. Other water rights with same point of diversion: 22-2223 (WELL No. 1) 3.87 cfs ☐ Copies Attached ☐ Copies of Field Exam's Attached

C. SYSTEM DESCRIPTION

1. Diversion System Diagram: Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable. ☐ Alternative diagram attached



2. ☒ Copy of U.S.G.S. Quadrangle Attached Showing location(s) of point(s) of diversion and place(s) of use (required).
☒ Photo of Diversion and System Attached (required for all but single household domestic groundwater, and stockwater).
☒ Aerial Photo Attached (required for irrigation of 10 acres or more).

RE-EXAMINATION FIELD REPORT

A. GENERAL INFORMATION

Permit No. 22-07280

B. MEASUREMENTS:

Date: 16 Nov 1998

Note: Measurements taken with 2 different diameter tapes & thickness mikes

North Well #1: o.d. = 11.850" - 12.050" Thickness = 0.110" - 0.113"
 South Well #2:
 North mainline: o.d. = 14.000" - 14.040" Thickness = 0.102" - 0.105"
 South mainline: o.d. = 15.990" - 16.025" Thickness = 0.136" - 0.139"

C. FLOW CALCULATIONS:

$$i.d. = [o.d.] - [2(T)]$$

i.d. = inside diameter

o.d. = outside diameter

T = wall thickness

$$Q_{cfs} = (i.d.)^2(\sqrt{H})(C) \div 448.8 \text{ gpm/cfs}$$

H = differential pressure inches H₂O

C = Annubar Constant

C for 12" = 3.99

C for 14"-16" = 4.01

Assumptions:

o.d. = maximum measured outside diameter

T = minimum measured thickness

H = use differential pressure measured original exam (6-29-87)

NORTH #1 WELL: $i.d. = [12.050] - [2(0.110)] = 11.830$ $H = 12.9'$ $C = 3.99$

$$Q_{cfs} = (11.830)^2(\sqrt{12.9})(3.99) \div 448.8 = 2005.567 \text{ gpm} \div 448.8 \text{ gpm/cfs}$$

$$Q_{cfs} = 4.469 \text{ cfs} = 4.47 \text{ cfs}$$

SOUTH #2 WELL:

North Mainline: $i.d. = [14.040] - [2(0.102)] = 13.836$ $H = 4.9'$ $C = 4.01$

$$Q_{cfs} = (13.836)^2(\sqrt{4.9})(4.01) \div 448.8 = 1699.274 \text{ gpm} \div 448.8 \text{ gpm/cfs}$$

$$Q_{cfs} = 3.786 \text{ cfs} = 3.79 \text{ cfs}$$

South Mainline: $i.d. = [16.025] - [2(0.136)] = 15.753$ $H = 6.7$ $C = 4.01$

$$Q_{cfs} = (15.753)^2(\sqrt{6.7})(4.01) \div 448.8 = 2575.777 \text{ gpm} \div 448.8 \text{ gpm/cfs}$$

$$Q_{cfs} = 5.739 \text{ cfs} = 5.74$$

9.53 for 5 well

TOTAL CALCULATED FLOW RATE: $Q_{TOME} = 4.47 \text{ cfs} + 3.79 \text{ cfs} + 5.74 \text{ cfs} = 14.00 \text{ cfs}$

D. AUTHENTICATION:

Field Examiner's Name:

KEITH C WILSON

MICROFILMED

DEC 30 1998